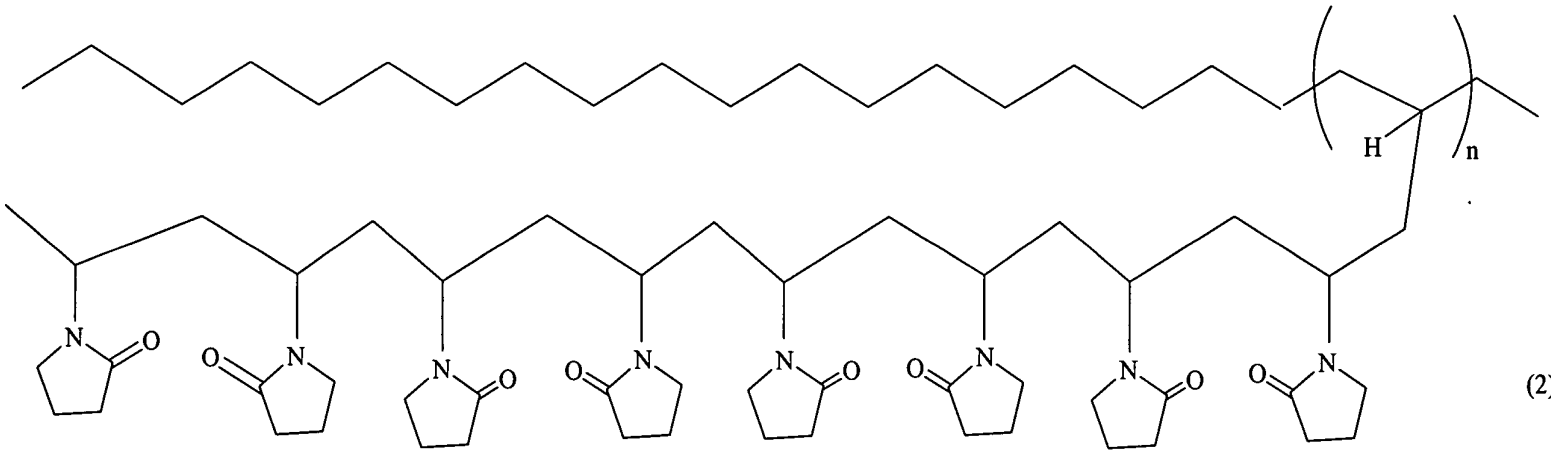
REQUEST FOR RECONSIDERATION

Applicants thank Examiner Fubara for the helpful and courteous discussion of April 21, 2004. During the discussion, Applicants' U.S. representative presented arguments that the prior art relied upon by the Examiner does not disclose polymeric materials and polymeric mixtures wherein polyvinyl pyrrolidone (PVP) is grafted onto or otherwise chemically bonded to a polymer chain.

The chemical bonding structure of the presently claimed organic polymer materials is described diagrammatically on page 9 of the specification as originally filed. The schematic on page 9 demonstrates how a polyethylene polymer may be modified by grafting N-vinylpyrrolidone monomers onto polyethylene to form PVP branches bonded to the polyethylene polymer. For convenience structure (2) on page 9 of the specification is reproduced below.



(2)

The structure (2) is shown above in a way to demonstrate the ethylene backbone and the PVP side chain bonded to the backbone. Polyethylene is the backbone polymer to which relatively short chains of PVP or monomer units of vinyl pyrrolidone are chemically bonded. The polyethylene polymer is of significantly higher molecular weight than the side chain. Importantly, the drawing above illustrates there is a direct, covalent chemical bond between the PVP and the polyethylene.

The diagram above demonstrates the structure of a polymer having side chains. Such a structure may also be represented as shown in the attached pages taken from M. Chanda and S. K. Roy, "Plastics Technology Handbook," Marcel Dekker, Inc., New York (1987), page 18. As is clearly shown on the attached sheets, a graft copolymer which represents a long backbone polymer is bonded to side chains of a different polymer represented by a chain of solid circles. The solid circles represent polymerized monomer units such as the N-alkyl-N-vinylalkylamide units recited in the present independent claims. The unfilled circles represent polymerized units of, for example, ethylene which form the backbone of the polymer to which the PVP side chains are bonded.

Structure (d) is different from structures (a)-(c) shown in the attached sheets. In structure (d) polymers of a different type of monomer are grafted onto the polymer backbone. In comparison, in structures (a) and (b) the copolymer backbone is made up of a mixture of different types of monomers. As is readily evident from a comparison of these structures, the graft structure (d) is substantially different from the other copolymer structures (a)-(c).

The compositions of Smith (WO 85/02422) may include a fiber-forming copolymer component and an alloying component. It appears that the Office may be asserting that the copolymers disclosed in Smith, such as the rayon-polyvinyl pyrrolidone fiber of Example 2 (page 25), may be the same as the organic polymer of the present invention. Smith provides a reference to U.S. Patent No. 4,136,697 to describe how the prior art rayon-polyvinyl

pyrrolidone copolymer is prepared. A copy of U.S. 4,136,697 is attached herewith for the Examiner's convenience.

In Example 2 of Smith it is disclosed that the prior art fibers are a rayon-polyvinyl pyrrolidone mixed polymer fiber (page 25, lines 4-5). In the Examples of the prior art patent U.S. 4,136,697 (column 4, lines 20-43), the preparation of such a mixture is described. A polyvinyl pyrrolidone polymer is mixed with another material such as cellulose and the mixture is then extruded. There is no disclosure or suggestion that the polyvinyl pyrrolidone is chemically bonded to the other polymeric material (e.g., cellulose). Therefore, the prior art polyvinyl pyrrolidone/polymeric material mixtures are not copolymers but are blends or alloys of different polymeric materials.

The term "alloy" is used in the plastics industry to denote blends of polymers as shown in the attached dictionary definition taken from L. R. Whittington, "Whittington's Dictionary of Plastics," Society of Plastics Engineers, Inc., Technomic, Lancaster (1978), page 13. A blend of different polymers is not a copolymer or a polymer having side chains. A blend or mixture of polymers does not require chemical bonds between the different polymeric materials. In the present claims the monomer units of the N-alkyl-N-vinylalkylamide are chemically bonded to the polymer backbone. Therefore the structure of the polymeric material recited in the present claims is not disclosed or suggested by the mixtures or alloys of Smith.

Even if Smith discloses copolymers of PVP on page 5, lines 2-20 these copolymers are not disclosed to have the chemical structure required of the polymeric material of the present claims; namely, that the N-alkyl-N-vinylalkylamide monomer units are present as side chains on a polymer.

The structure of the polymeric material recited in the present claims has an important effect on whether or not the claimed composition is able to provide the desired physical

characteristics. If the N-alkyl-N-vinylalkylamide is present as polymerized monomer units in the polymer backbone instead of as side chains the properties of the polymer may be sacrificed (page 3, line 11 - page 4, line 8).

Because the prior art does not disclose or suggest the copolymer structure of the present claims (e.g., a polymer with side chains), the Smith reference cannot anticipate or render obvious the presently claimed invention.

The Office has asserted that it was stated in the Amendment filed on October 29, 2003 that the prior art fails to disclose N-alkyl-N-vinylalkylamide. The Response filed on October 29, 2003 does not state the prior art does not disclose N-alkyl-N-vinylalkylamide monomers. Instead the Response filed on October 29, 2003 states:

> "Smith does not disclose one of the present claim limitations, namely the organic polymer having side chains which contains polymerized N-alkyl-N-vinylalkylamide units on the organic polymer backbone." (page 9, lines 8-10 of the Amendment filed on October 29, 2003).

Since the claimed polymer composition of Claim 1 is limited to compositions which comprise "an organic polymer having a polymer side chain containing one or more polymerized N-alkyl-N-vinylalkylamide monomer units bonded to the backbone of an organic polymer" the prior art references cannot anticipate or render obvious the claimed invention.

Applicants respectfully request the withdrawal of the rejections.

Respectfully submitted,

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